E-CIGARETTES: THREAT OR OPPORTUNITY?

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1027 words

Two contrasting Viewpoints by Stimson and Chapman in this edition illustrate the divisions in the public health community over e-cigarettes. Stimson argues that we should embrace and promote e-cigarettes, while Chapman highlights the pitfalls of this simplistic approach. Such contrasting views are perhaps inevitable given the infant evidence base surrounding this rapidly emerging technology, but the consequent uncertainty about the population impacts of e-cigarettes should preclude an overly firm stance either for or against – as we outline below, it is simply too early to know.

Two key questions surround this debate: are e-cigarettes an opportunity or threat to public health and how can we ensure benefits are maximised and harms minimised? As Michael Russell wrote in 1976, "people smoke for the nicotine but they die from the tar." E-cigarettes deliver the nicotine without the tar as their use involves no tobacco combustion. Common sense therefore dictates that e-cigarettes are significantly less harmful than cigarettes and for the individual smoker there is little doubt that switching to e-cigarettes will be beneficial.

The population level impacts, however, are far less certain. If taken up only by smokers or those who would otherwise have taken up smoking and if effective as a cessation aid, e-cigarettes will undoubtedly be a force for good. Conversely, if the heavy marketing of e-

cigarettes which has been found to target young people through adverts uncannily similar to cigarette ads long ago banished from our screens, and their use in smoke-free public places re-normalise and re-glamorise smoking thereby threatening progress in tobacco control, lead into rather than out of smoking (the so-called gateway effect), and maintain addiction rather than promoting cessation, they may be detrimental to public health. Ultimately, the balance between these various potential outcomes and the health impacts of e-cigarettes will determine the extent of any public health gain.

These are all issues on which we know relatively little. The remarkable speed of uptake shows e-cigarettes are acceptable to smokers in a way that medicinal nicotine products are not, suggesting they could replace smoking. Yet their efficacy as quit aids remains uncertain. While dedicated users report that e-cigarettes helped them quit smoking, these benefits are not seen in population based cross-sectional surveys.(1) Longitudinal data are either flawed(2) or find no significant impact on quitting,(3, 4) while randomised controlled trials find e-cigarettes are no more effective than nicotine patches in achieving smoking cessation.(5, 6) The Smoking Toolkit Study, monthly repeat cross-sectional surveys representative of the English population, provides the most supportive data showing that those using e-cigarettes to quit were significantly more likely to succeed than those using over-the-counter nicotine replacement.(7) The data also suggest e-cigarettes may be contributing to a reduction in smoking prevalence in England through increased quit attempts and success.(8, 9)

Despite consensus on the health benefits of e-cigarettes relative to cigarettes, little is known about their absolute health impacts. No studies have examined long-term impacts including those of inhaled humectants (the main e-liquid ingredient), flavourings or additives.(1, 10) Yet e-cigarette vapour has been found to contain a variety of toxic and carcinogenic chemicals albeit, initial studies suggested, at considerably lower levels than in cigarette smoke.(11, 12) Recent work, however, finds that concentrations may reach levels seen in cigarette smoke(13) while in-vitro studies find varying levels of cytotoxicity.(1, 14, 15)

Despite concerns about uptake among young non-smokers, no longitudinal studies have yet examined whether e-cigarettes serve as ‘gateways’ to future tobacco use, though it is

reassuring that in all studies, including those in young people(16), the majority of users are current or former smokers(1). Nonetheless, while surveys show negligible use among young non-smokers in the UK (2013 data), elsewhere in Europe – including France, Poland, Finland and Hungary(17-20) – e-cigarette use among young non-smokers is reported as ranging from 3.2% to 4.7%(16). Repeat cross-sectional data from the US also show increasing rates of youth e-cigarette use(16).

The transnational tobacco companies' (TTCs) growing involvement in e-cigarettes is a further concern. TTCs' own documents show their historical interest in harm reduction was driven by the potential to prevent rather than encourage declines in smoking, to enhance their tarnished reputation and to enable access public health groups and policy makers(21, 22), the latter a particular concern when TTCs have increasingly being driven from the policy-making table. TTCs are already actively using harm reduction rhetoric to undermine the authority of public health organisations, while e-cig adverts have been used to undermine smokefree policies and effectively promote smoking given the marked similarity between cigarettes and e-cigarettes at a time when other marketing routes are being rapidly closed.

We turn then to our second question – how best to maximise opportunities and minimise harms? This requires research and timely monitoring of trends so that adverse developments can be quickly addressed. It also requires a regulatory framework that encourages e-cigarette uptake among current smokers and innovation to maximise effectiveness as a quit product while simultaneously maximising product safety and preventing uptake among non-smokers. Such aims may be mutually exclusive as reflected in heated debates over the 2014 EU Tobacco Products Directive which reached a compromise in requiring products to be licenced either as medicines with related limitations on marketing, or as consumer products subject to quality and purity standards and the same advertising restrictions as tobacco. However, the TPD only comes into force in 2016 and much can happen in the interim. Member States may, therefore, wish to further protect non-smokers through controls on marketing and use in public places(23), the latter being implemented in some US states by bringing e-cigarettes under the auspices of smokefree regulations.

Above all we must not allow e-cigarettes to detract attention from what should be our key focus – smoked tobacco. Policies on e-cigarettes must therefore be combined with those making tobacco even less desirable and available. Indeed, we believe e-cigarettes present a unique opportunity to take a more radical approach and phase out combustible tobacco use. If e-cigarettes really do enable quitting, if tobacco companies really are committed to harm reduction and if changes are phased in, giving companies and users time to adjust, there should be little objection. Such an approach would eliminate the threats identified above and save far more lives.

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